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Fig. 3.

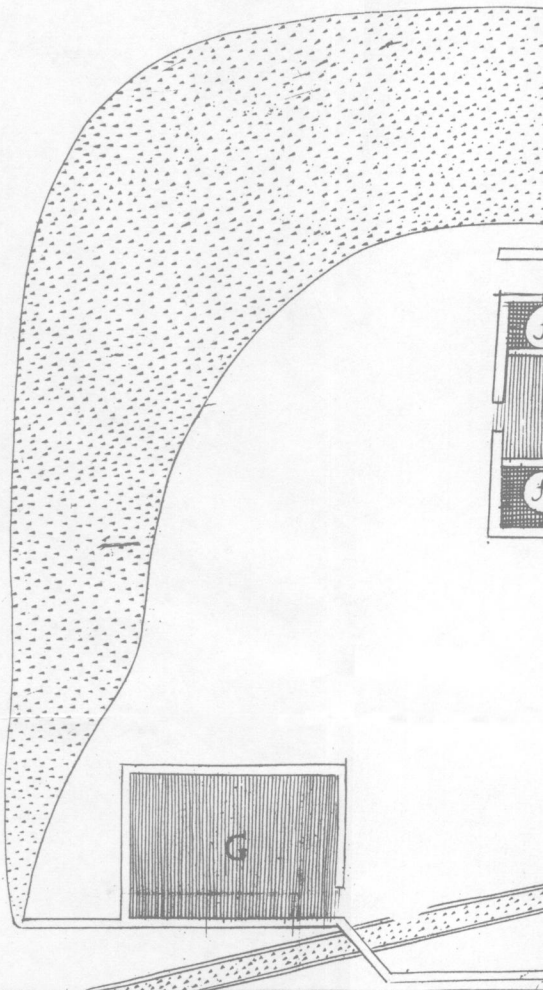
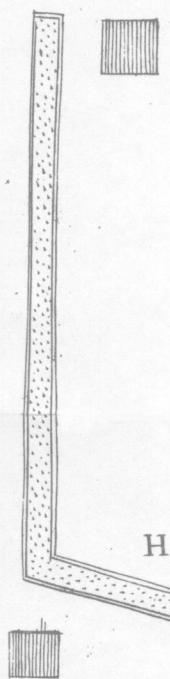
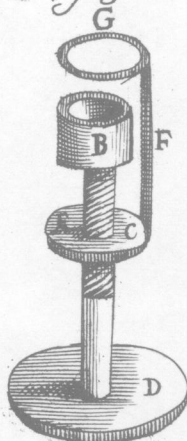


Fig. 2.

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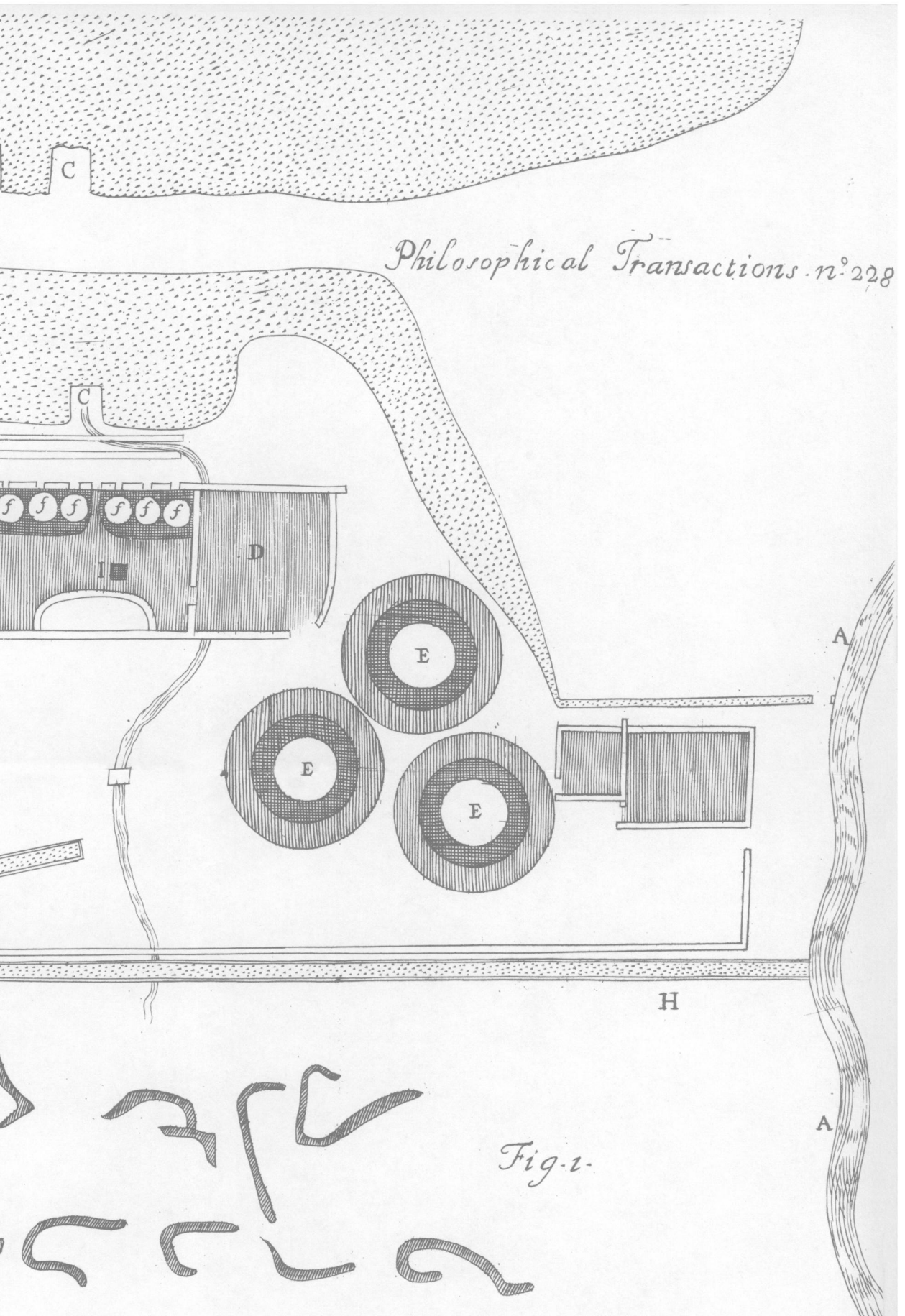




Fig. 3.

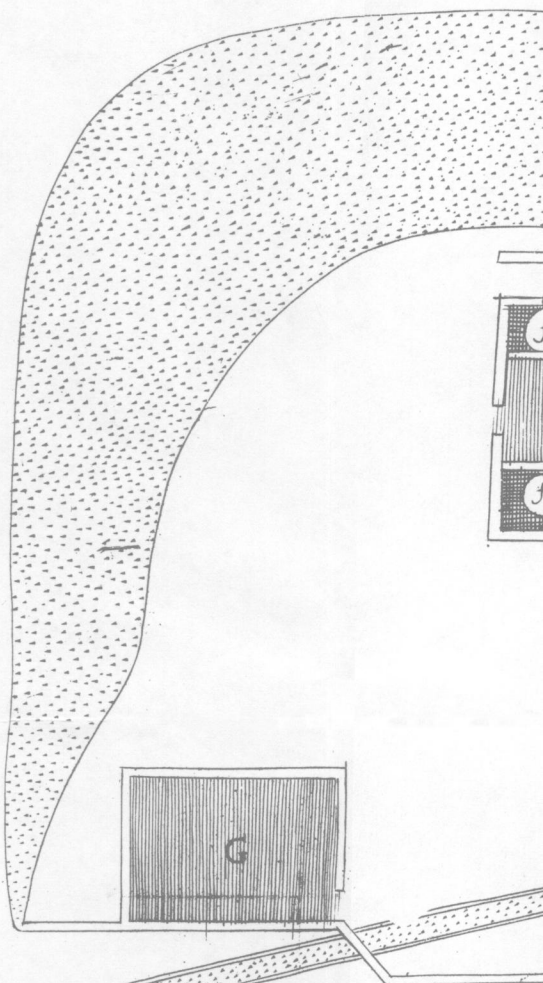
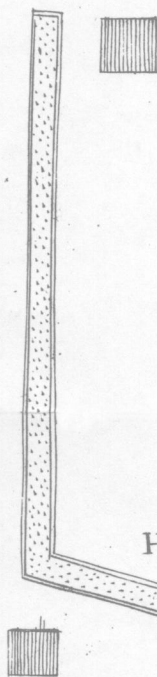
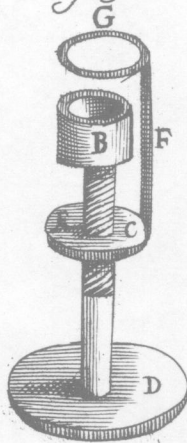
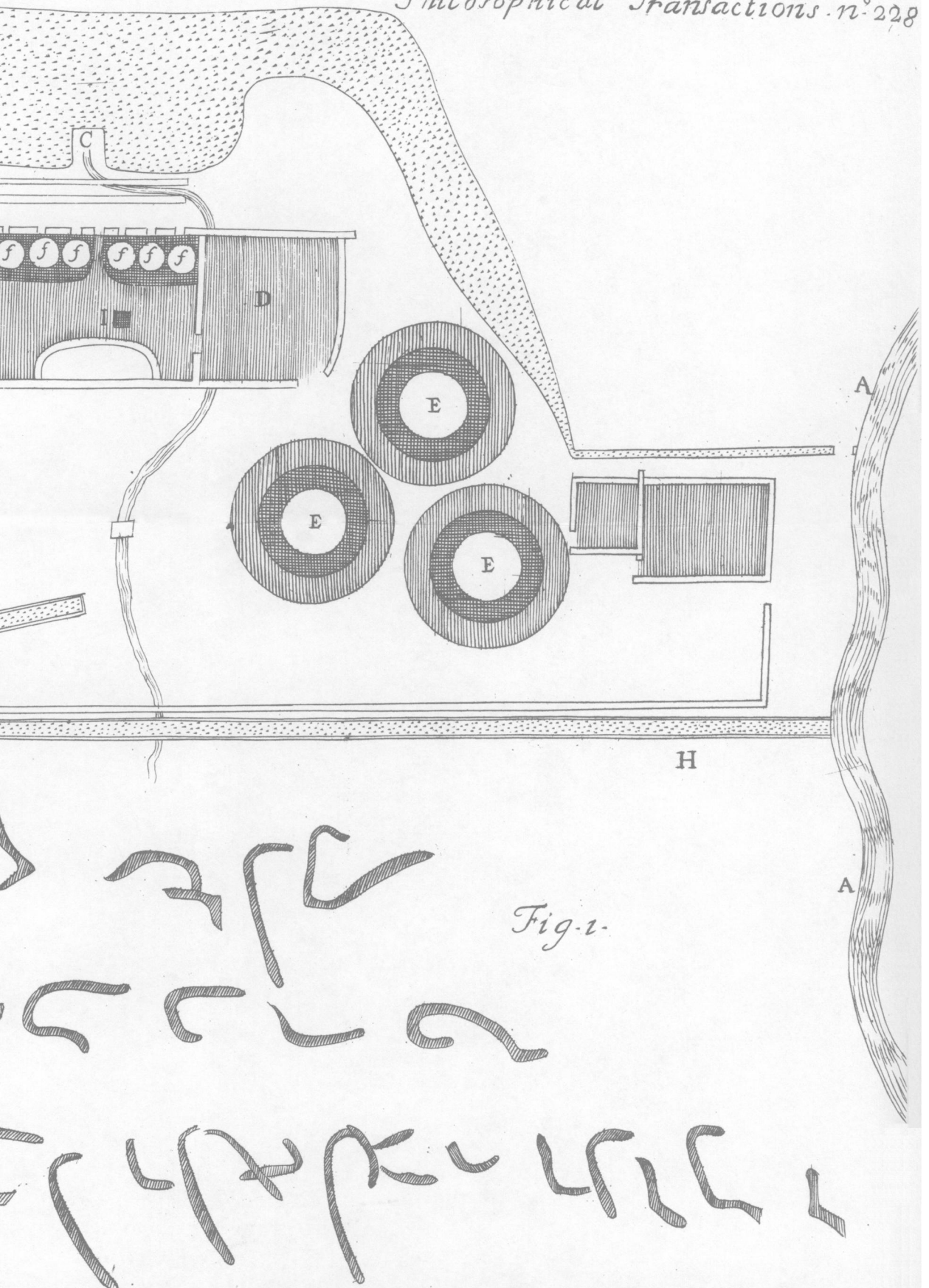


Fig. 2.

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A whole

A whole Town of 'em with Streets, they joyning like Houses one to another, each having their *Columbaria*. *Ollæ ossaria*, with Paintings, Inscriptions in Latin and the Old *Etruscan* Language and Characters, which was taken by him and cut in Brass.—— Seignior *Fabretti* told me he had at least Fifty large Inscriptions in that Language sent him from several places in *Tuscany*, and gave me two, one in the *Etruscan* Characters, the other *Roman*, and withal said, that he design'd to leave them out of the Book he was publishing, because he must be forc'd to have them done in Brass, or have Characters cut on purpose, which was too chargeable, and the words were unintelligible.

On the backside of the Inscription, I send you another Inscription on an Old Urn in the *Etruscan* Language the Character seems to be not much unlike the *Runick*.

See the Figure of the Palmyren Inscription Fig. 1. and the *Etruscan*, Fig. 2.

VI. *A Letter from Mr. Stephen Gray, from Canterbury, May the 12th 1697, Concerning making Water subservient to the viewing both near and distant Objects; with the Description of a Natural reflecting Microscope.*

I send you here a short Account of what has been the success of my attempts, to make small Portions of Water subservient to the viewing both near and distant Objects, together with the Description of a Natural Reflecting Microscope.

L l l l 2

Drops



Drops of Fair Water being let fall on a piece of Plain Glas, form themselves into *Plano Convexes*, having a Convexity proportionable to the heights, from which they descend, from a greater height, a less, from a less, a greater degree of Convexity. I applied some of these as Reading Glasses for single Words of small Letters, as on the Globes and Maps, and found no other Inconveniency, then that the Fluidity of the Water obliges one to keep the Glas Horizontal, which I after devised a way to Remedy.

I took a sufficient quantity of Izing-Glas and dissolved it in Water over the Fire, and whilst 'twas warm I dipt a stick into the Solution, and let some Drops of it fall on the Glas as before, and in a Quarter of an Hour they acquire a Consistency, that permits them to be held in any Position, and tho' they are not altogether so transparent, yet this is little or no impediment to their use. The drops of this Solution are more exactly defined then those of Common Water, having their edges exactly Circular, and one may make them of a much longer Focus then those. I applied some of these lentes to a hole in a darkned Room, and found they rendred the Images of Objects with but an indifferent distinctness.

A thin flat Ring of Brass, not exceeding 4 Tenths of an Inch Diameter in its interior Circle being cemented to a plain Piece of Glas, and filled with Water or the Solution now mentioned, then by pressing the Finger into it, till what is superfluous be taken off; there will be formed a plano Concave which may serve as an Eye Glas to a Prospective, or to any other optical use Concave Glasses are applicable.

I have tried what would be the success of Combining Portions of Water by the help of Brass Rings, and plain pieces of Glas, to give them their true Figure and  
requisite

requisite apertures, and inserted them at the ends of Tubes of several lengths; and find, that tho' these natural lentes may serve as Eye Glasses, yet when used as Object ones either to Telescopes or double Microscopes: their Effects will not compensate the trouble there is in using them.

I shall now proceed to give you the Description of my Natural Reflecting Microscope.

*A Fig. 3.* Represents a small flat Ring of Brass, whose rior Circle must not much exceed 4 Tenths of an Inch Diameter, and about one thirtieth of an Inch thick; this we may call the Frame or Cell of the Glass, it must be prepared for use after the following manner. Take a small Globule of Quicksilver and dissolve it in a few drops of *Aqua fortis*, to which you may add ten parts of common Water, dip the end of a stick in this Liquor and rub the inward Circle of the Ring with it, so it will have acquired a Mercurial Tincture, and being wiped dry, be fit for use. Then let it be laid on the Table, and pour a drop of Quicksilver within it, which press gently with the ball of the Finger, and it will adhere to the Ring, then cleanse it with a Hares foot, and you will have a *Convex Speculum*. Take up the Ring and *Speculum* carrying it Horizontal, and lay it on the brims of the hollow Cilinder *B*. so will the Mercury become a Concave Reflecting *Speculum*, which from the smallness of the Sphere of which it seems to be a Section, may be used as a Microscope. The Cilindrick Vessel *B*. has a Screw hole at bottom, by which it is screwed to the top of the Pedestal *C D*, *C E F G*, is the Supporter of the Object Plate, which as you see may be raised higher, or let lower as there is occasion by the screw on the Pedestal: The Object Plate must be of Glass cemented to the Ring *G*.

This

This Instrument with a little variation may be made a Reflecting Microscope of Water, if instead of the Ring *G* there be only a small Arm with a hole in it to receive a drop of Water, and the Cylindrick Vessel *B* be either taken away or screwed on with its bottom upwards, so as to make an Object Plate, and this will be found more convenient for viewing the Textures of Opacous Object, then that described in N<sup>o</sup> 223 of the Transactions, which is more fit for Fluid and Transparent ones.

I have begun some Experiments towards a way of making a large Concave *Speculum* for Burning Glasses, and have proceeded so far, as to find Materials that will naturally receive their true Figure, though of many Feet in Diameter, but have not yet overcome the difficulties of giving them a good Polish.

VII. *Extract of two Letters, the one to Dr. William Gibbons, Fellow of the College of Physicians London; the other to Mr. Nicholas Staphorst, Operator in Chymistry at Apothecaries-Hall, from Mr. Edward Coles, giving an account of a Red Colour produced by mixture of a Sulphureous Spirit with a Volatile Alkali.*

**I**n making several Chymical Experiments found a Sulphureous Spirit, which being mixt with a Volatile *Alkali*, such as Spirit of *Sal Armoniack*, or *Urin*, &c. gives it a red Colour in a moment, and does the same without any effervescence, tho' both the Liquors were clear